

Work Order ID 91791

\*91791\*

October-18-12 1:56:01 PM

Page 1

Item ID: 646.9711

Accept

\*N900040100\*

Setup Start

\*NS1\*

Revision ID:

Item Name: Blade

Start Date: 18/10/2012 Start Qty: 24.00

\*24\*

Cust Item ID:

Required Date: 01/11/2012 Req'd Qty: 24.00

\*24\*

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12-10-18 Tooling:

Date:

Run Start

\*NR1\*

QC:

Date: SPC (Y/N):

Date:

Stop

\*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
646.9700	N/C

100  
**\*100\***  
Bandsaw  
Jeaspa Bandsaw

BAND SAW  
Memo  
Cut Blank at 4.625"

0.00

*FK 12/12/27*

24 *Ø*

110  
**\*110\***  
HAAS 1  
HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1  
Memo  
1-Machine per folio FB135  
DWG REV: NC  
FOLIO REV: N/C

0.00

*FK 12-12-30*

24 *Ø*

2- deburr and break all sharp edges except otherwise noted

NCR: Yes / No

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS					
			Rework <input type="checkbox"/>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>				
			Scrap <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coor. <input type="checkbox"/>	Quality <input type="checkbox"/>				
			Use-as-is <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>				
			Work Order Update <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data											
Equip/Tooling											
Operator											
Material											
Setup											
Other											
Process											
Supplier											
Training											
Unapproved											
FAULT CATEGORY											
Landing Gear				General							
				<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain	<input type="checkbox"/> Ovalized	<input type="checkbox"/> Pressure/Forced			
				<input type="checkbox"/> Centre Not Concentric to O/S -	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware	<input type="checkbox"/> Over/Under tolerance	<input type="checkbox"/> Temperature/Cure			
				<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete	<input type="checkbox"/> Part Incorrect	<input type="checkbox"/> Weld			
				<input type="checkbox"/> Crushed/Crimped.	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear	<input type="checkbox"/> Part Lost/Missing	<input type="checkbox"/> Wrong Stock Pulled			
				<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance	<input type="checkbox"/> Part Moved				
				<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Mislabeled	<input type="checkbox"/> Positioned Wrong				
				<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread	<input type="checkbox"/> Power Loss/Surge				
				<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset					
				<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration					
				<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence					
				<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions					

Work Order ID 91791

\*91791\*

Page 2

October-18-12 1:56:01 PM

Item ID: 646.9711

Accept

\*N900040100\*

Setup Start

\*NS1\*

Revision ID:

Item Name: Blade

Stop

\*NS2\*

Start Date: 18/10/2012 Start Qty: 24.00

\*24\*

Cust Item ID:

Required Date: 01/11/2012 Req'd Qty: 24.00

\*24\*

Customer:

Reference:

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	*NR1*
	QC:	Date:	SPC (Y/N):	Date:		Stop	*NR2*
120	QC2- Inspect parts off machine FAI/FAIB	0.00	12-12-30	12/12/27	24	0	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC2- Inspect parts off machine FAI/FAIB	0.00	12-12-30	12/12/27	24	0			

\*120\*

QC

Quality Control

130

QC8- Inspect parts - second check

0.00

B.A 12/12/30

DAS  
08  
9-89

\*130\*

QC

Quality Control

140

Outsource process - Heat Treat

0.00

CZ 13/01/09

\*140\*

Outsource1

Outsource process - Heat Treat

Memo

0.00

HEAT TREAT AS PER DWG, SEE NOTE #3

ISSUE P/O: 18762

NCR: Yes / No

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____		<b>DISPOSITION</b>			<b>AGAINST DEPARTMENT/PROCESS</b>						
		Rework	<input type="checkbox"/>	Skid-tube	<input type="checkbox"/>	Crosstube	<input type="checkbox"/>	Water Jet	<input type="checkbox"/>	Engineering	<input type="checkbox"/>
		Scrap	<input type="checkbox"/>	Machining	<input type="checkbox"/>	Small Fab	<input type="checkbox"/>	Prod. Eng. Coor.	<input type="checkbox"/>	Quality	<input type="checkbox"/>
		Use-as-is	<input type="checkbox"/>	Thermoforming	<input type="checkbox"/>	Finishing	<input type="checkbox"/>	Rec/Store/Packaging	<input type="checkbox"/>	Other	<input type="checkbox"/>
		Work Order Update	<input type="checkbox"/>	Large Fab	<input type="checkbox"/>	Composite	<input type="checkbox"/>	Supplier	<input type="checkbox"/>		
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance		Initial Chief Eng	Action Description		Sign & Date	Verification	QC Inspector
Doc/Data											
Equip/Tooling											
Operator											
Material											
Setup											
Other											
Process											
Supplier											
Training											
Unapproved											
<b>FAULT CATEGORY</b>											
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube				<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio				<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			
								<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge			
								<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled			
								<input type="checkbox"/> Other			



NCR: Yes / No

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS					
			Rework <input type="checkbox"/>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>				
			Scrap <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coor. <input type="checkbox"/>	Quality <input type="checkbox"/>				
			Use-as-is <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>				
			Work Order Update <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance		Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector	
Doc/Data											
Equip/Tooling											
Operator											
Material											
Setup											
Other											
Process											
Supplier											
Training											
Unapproved											
FAULT CATEGORY											
Landing Gear				General							
				Bending <input type="checkbox"/>	Bend <input type="checkbox"/>	Grain <input type="checkbox"/>	Ovalized <input type="checkbox"/>	Pressure/Forced Temperature/Cure			
Centre Not Concentric to O/S <input type="checkbox"/>	BOM/Route <input type="checkbox"/>	Hardware <input type="checkbox"/>	Over/Under tolerance <input type="checkbox"/>	Weld <input type="checkbox"/>							
Cracks <input type="checkbox"/>	Broken/Damaged <input type="checkbox"/>	Inspection Incomplete <input type="checkbox"/>	Part Incorrect <input type="checkbox"/>	Wrong Stock Pulled <input type="checkbox"/>							
Crushed/Crimped. <input type="checkbox"/>	Burrs <input type="checkbox"/>	Instructions Incomplete/Unclear <input type="checkbox"/>	Part Lost/Missing <input type="checkbox"/>								
Cuffs <input type="checkbox"/>	Contamination <input type="checkbox"/>	Maintenance <input type="checkbox"/>	Part Moved <input type="checkbox"/>								
Heat Treat <input type="checkbox"/>	Countersink <input type="checkbox"/>	Mislabeled <input type="checkbox"/>	Positioned Wrong <input type="checkbox"/>								
Inspection Strip in Tube <input type="checkbox"/>	Cut Too Short <input type="checkbox"/>	Misread <input type="checkbox"/>	Power Loss/Surge <input type="checkbox"/>								
Ripples in Bend <input type="checkbox"/>	Drill Holes <input type="checkbox"/>	Offset <input type="checkbox"/>	Other <input type="checkbox"/>								
Torque Waves in Extrusion <input type="checkbox"/>	Drawing <input type="checkbox"/>	Out of Calibration <input type="checkbox"/>									
Turning Sequence <input type="checkbox"/>	Finish <input type="checkbox"/>	Out of Sequence <input type="checkbox"/>									
Wave/Twist in Tube <input type="checkbox"/>	Folio <input type="checkbox"/>	Outside Dimensions <input type="checkbox"/>									

**Work Order ID 91791****\*91791\***

Page 4

October-18-12 1:56:01 PM

Item ID: 646.9711

Accept

**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Item Name: Blade

Stop

**\*NS2\***

Start Date: 18/10/2012 Start Qty: 24.00

**\*24\***

Cust Item ID:

Required Date: 01/11/2012 Req'd Qty: 24.00

**\*24\***

Customer:

Reference:

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	<b>*NR1*</b>
						Stop	<b>*NR2*</b>
	QC:	Date:	SPC (Y/N):	Date:			

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170 <b>*170*</b> QC	QC14- Inspect Spray Paint	0.00	DAS 16	13/04/10		24			
	Memo						Count		
Quality Control									

180 <b>*180*</b> Packaging Packaging	Identify as per dwg & Stock Location: <i>Med</i> <i>Fab</i>	0.00	<i>13-04-10</i>	24					
	Memo <i>"Russ"</i>	0.00							

190 <b>*190*</b> QC	QC21- Final Inspection - Work Order Release	0.00	<i>13/4/10 JJ</i>						
Quality Control	Memo	0.00							

*13-04-10 JJ*

NCR: Yes / No

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS					
			Rework <input type="checkbox"/>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>				
			Scrap <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coor. <input type="checkbox"/>	Quality <input type="checkbox"/>				
			Use-as-is <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>				
			Work Order Update <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data											
Equip/Tooling											
Operator											
Material											
Setup											
Other											
Process											
Supplier											
Training											
Unapproved											
FAULT CATEGORY											
Landing Gear				General							
				<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain	<input type="checkbox"/> Ovalized	<input type="checkbox"/> Pressure/Forced			
				<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware	<input type="checkbox"/> Over/Under tolerance	<input type="checkbox"/> Temperature/Cure			
				<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete	<input type="checkbox"/> Part Incorrect	<input type="checkbox"/> Weld			
				<input type="checkbox"/> Crushed/Crimped.	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear	<input type="checkbox"/> Part Lost/Missing	<input type="checkbox"/> Wrong Stock Pulled			
				<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance	<input type="checkbox"/> Part Moved				
				<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Mislabeled	<input type="checkbox"/> Positioned Wrong				
				<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread	<input type="checkbox"/> Power Loss/Surge				
				<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset					
				<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration					
				<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence					
				<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions					

**Picklist Print**

October-18-12 1:56:05 PM

Page 1

Work Order ID: 91791

**\*91791\***

Parent Item: 646.9711

**\*646 9711\***

Parent Item Name: Blade

Start Date: 18/10/2012

Required Date: 01/11/2012

Start Qty: 24.00

Required Qty: 24.00

Comments: IPP REV:A NEW ISSUE 12/09/24 JFS VERIFY BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MSTEEL-A2- B0.500X1.250		Purchased		No		100	f	20.8716	0.386	9.751579			

**\*MSTFFI -A2-B0 500X1 250\***

AISI A2 TOOL STEEL BAR, 0.500 X 1.250

\*\*

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
MAT	20.8715789	
123250	20.8715789	
123763		

9.752

FK 12/12/27.

NCR: Yes / No

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

## **WORK ORDER NON-CONFORMANCE / UPDATE**

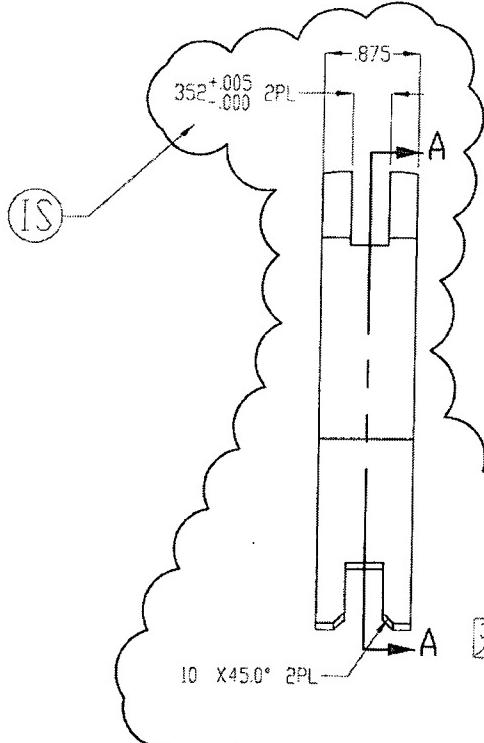
QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS					
			Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/> Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>				
Part No. _____											
NCR No. _____											
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data											
Equip/Tooling											
Operator											
Material											
Setup											
Other											
Process											
Supplier											
Training											
Unapproved											
FAULT CATEGORY											
Landing Gear	General										
	Bending <input type="checkbox"/>	Bend <input type="checkbox"/>	Grain <input type="checkbox"/>	Ovalized <input type="checkbox"/>	Pressure/Forced <input type="checkbox"/>						
	Centre Not Concentric to O/S <input type="checkbox"/>	BOM/Route <input type="checkbox"/>	Hardware <input type="checkbox"/>	Over/Under tolerance <input type="checkbox"/>	Temperature/Cure <input type="checkbox"/>						
	Cracks <input type="checkbox"/>	Broken/Damaged <input type="checkbox"/>	Inspection Incomplete <input type="checkbox"/>	Part Incorrect <input type="checkbox"/>	Weld <input type="checkbox"/>						
	Crushed/Crimped. <input type="checkbox"/>	Burrs <input type="checkbox"/>	Instructions Incomplete/Unclear <input type="checkbox"/>	Part Lost/Missing <input type="checkbox"/>	Wrong Stock Pulled <input type="checkbox"/>						
	Cuffs <input type="checkbox"/>	Contamination <input type="checkbox"/>	Maintenance <input type="checkbox"/>	Part Moved <input type="checkbox"/>							
	Heat Treat <input type="checkbox"/>	Countersink <input type="checkbox"/>	Mislabeled <input type="checkbox"/>	Positioned Wrong <input type="checkbox"/>							
	Inspection Strip in Tube <input type="checkbox"/>	Cut Too Short <input type="checkbox"/>	Misread <input type="checkbox"/>	Power Loss/Surge <input type="checkbox"/>							
	Ripples in Bend <input type="checkbox"/>	Drill Holes <input type="checkbox"/>	Offset <input type="checkbox"/>								
	Torque Waves in Extrusion <input type="checkbox"/>	Drawing <input type="checkbox"/>	Out of Calibration <input type="checkbox"/>								
	Turning Sequence <input type="checkbox"/>	Finish <input type="checkbox"/>	Out of Sequence <input type="checkbox"/>								
	Wave/Twist in Tube <input type="checkbox"/>	Folio <input type="checkbox"/>	Outside Dimensions <input type="checkbox"/>								

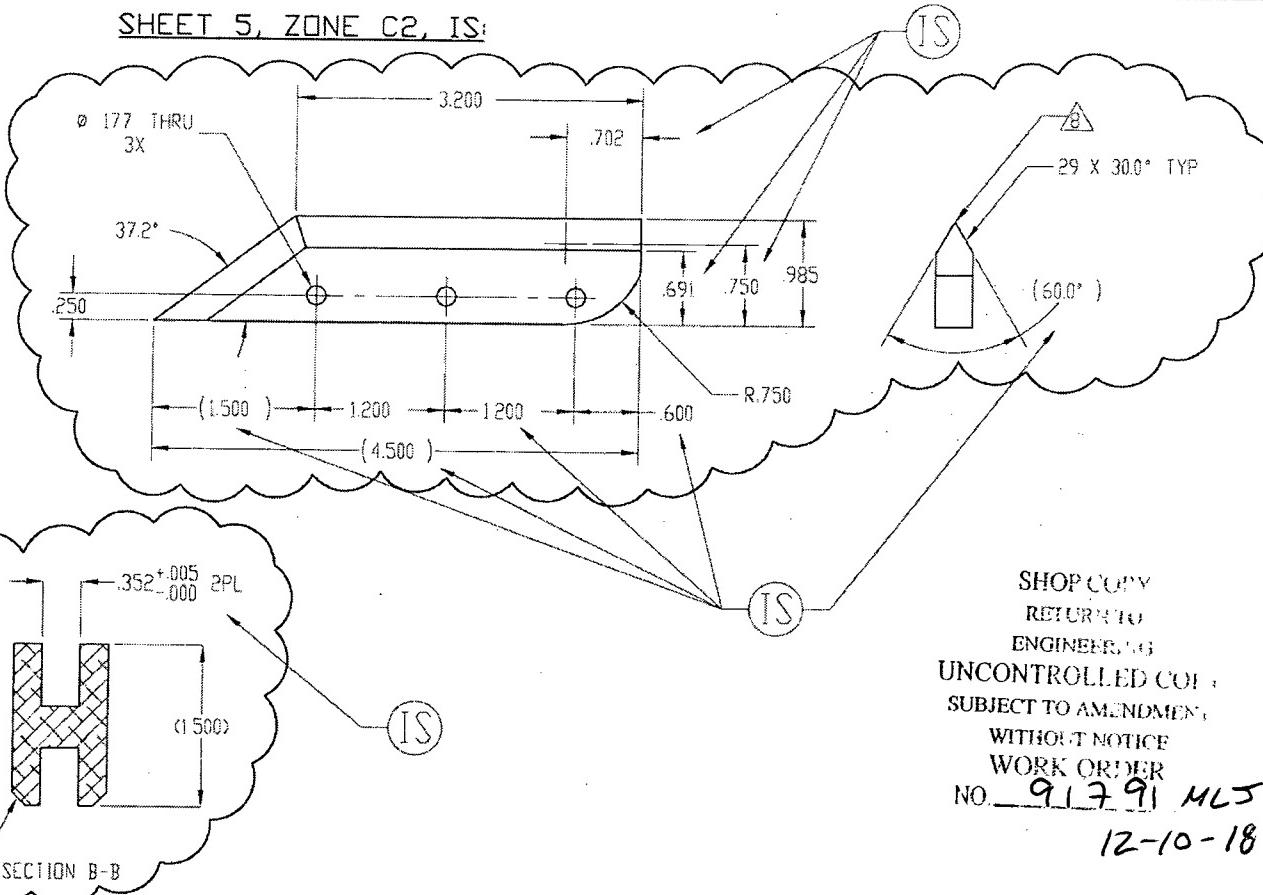
APICAL  
INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE			NO. 02744	SHEET 1 OF 1
DWG NO. 646.9700		REV:N/C	PREPARED BY S.HUFF	DATE: 01/07/10
DWG TITLE: CUTTER SUB ASSY		EFFECT ON DWG <input type="checkbox"/> INC. <input checked="" type="checkbox"/> UNINC.		
APPROVED BY:	ENGR <i>P.Baird</i>	MFG <i>Daniel Gray</i>	QC <i>Wendy L. Gray</i>	EFF: NEXT ORDER
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE REASON: REVISED SCREW LENGTH, CHANNEL WIDTHS & DIMENSIONING SCHEME SHEET 5.				

SHEET 2, ZONE C6, IS:



SHEET 5, ZONE C2, IS:



SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 91791 MLJ  
12-10-18

3	R	601.3157		12	SCREW		MS27039-0818
				.9701			
F/N	TC	PART NUMBER	QTY	DESCRIPTION			MATERIAL/SPECIFICATION
DOCUMENTS EFFECTED:							
	<input type="checkbox"/> MDL	<input type="checkbox"/> INSTALL INSTRUC	<input checked="" type="checkbox"/> ICA	<input type="checkbox"/> FMS	<input checked="" type="checkbox"/> BOM	CHANGE CATEGORY <input type="checkbox"/> MAJOR <input checked="" type="checkbox"/> MINOR	DER REVIEW REQUIRED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

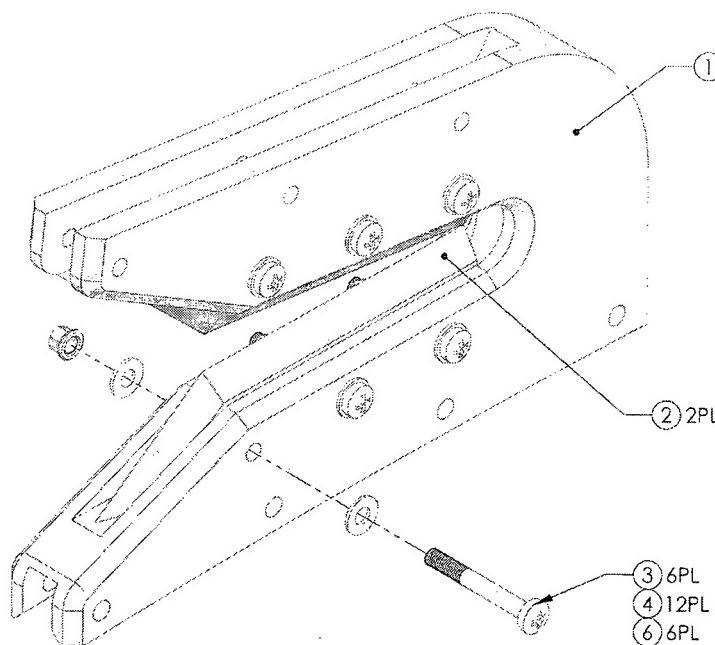
THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE EXCLUSIVE PROPERTY OF  
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THE WRITTEN PERMISSION OF SPECIAL VENTURES IS PROHIBITED.

9179

REF ID	DESCRIPTION	QTY	AMOUNT
1001	100% POLYPROPYLENE BAGS 100 X 100 CM	100	CHF 100.00
1002	PLASTIC BAGS 100 X 100 CM	500.00	CHF 500.00

## NOTES

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12**
  - 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III,  
CLASS 2, COLOR BLACK;  
CARDINAL 4860-50 PRETREATMENT PRIMER  
PRIME IAW MIL-P-2337J TYPE I CLASS N: 1-2 MIL MAX**
  - 3 MATERIAL: AISI A2 TOOL STEEL  
CONDITION: ANNEALED  
POST PROCESS: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS**
  - 4 FINISH: PRIME IAW MIL-P-2337J TYPE I CLASS N: 1-2 MIL MAX**
  - 5 DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED**
  - 6 IDENTIFY IAW MPP-120**
  - 7 APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY**
  - 8 CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE**



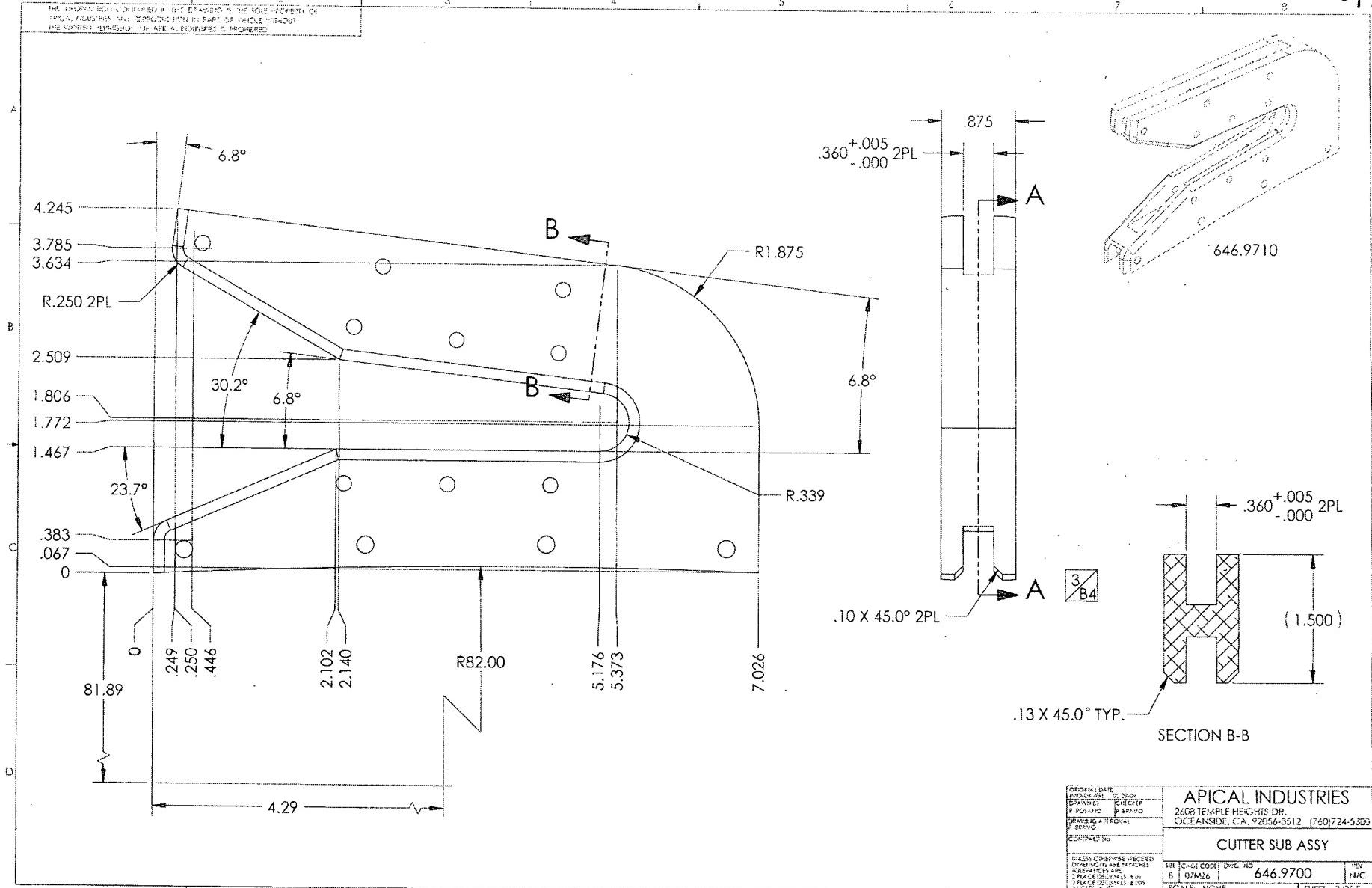
646.9701

**UNINCORPORATED ECN(s)**

0224

9179A

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AFKA, WHOSE USE AND APPROVAL IS IN PART OR WHOLE WITHOUT  
THE WRITTEN PERMISSION OF AFKA INDUSTRIES IS PROHIBITED.



91794

2

3

4

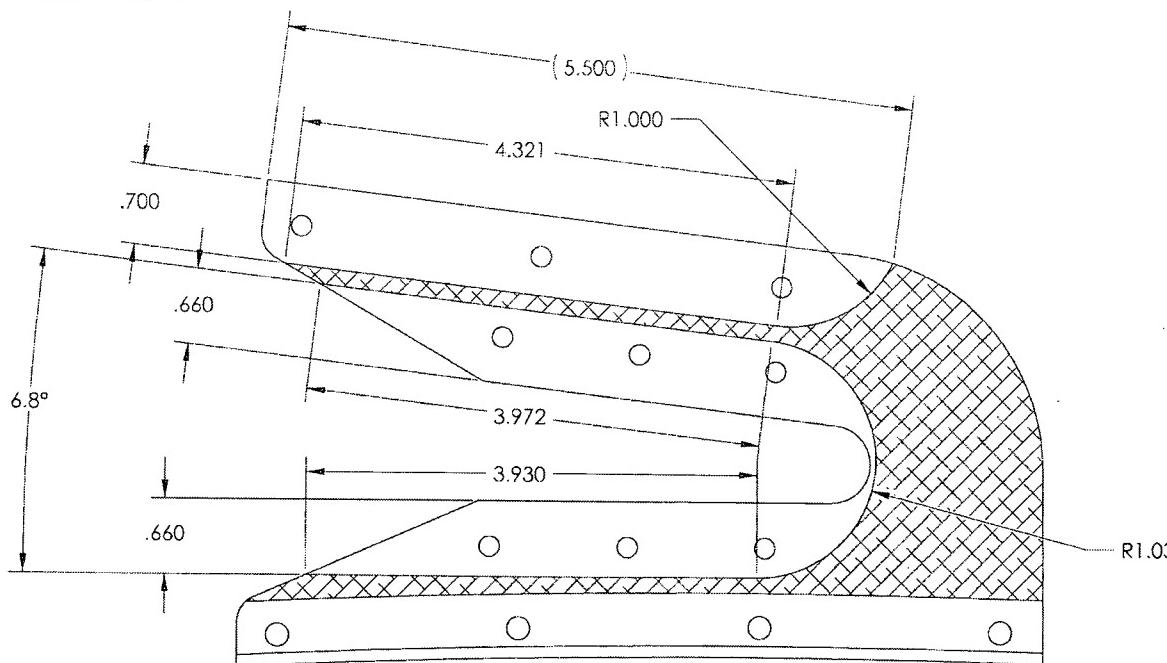
5

6

7

8

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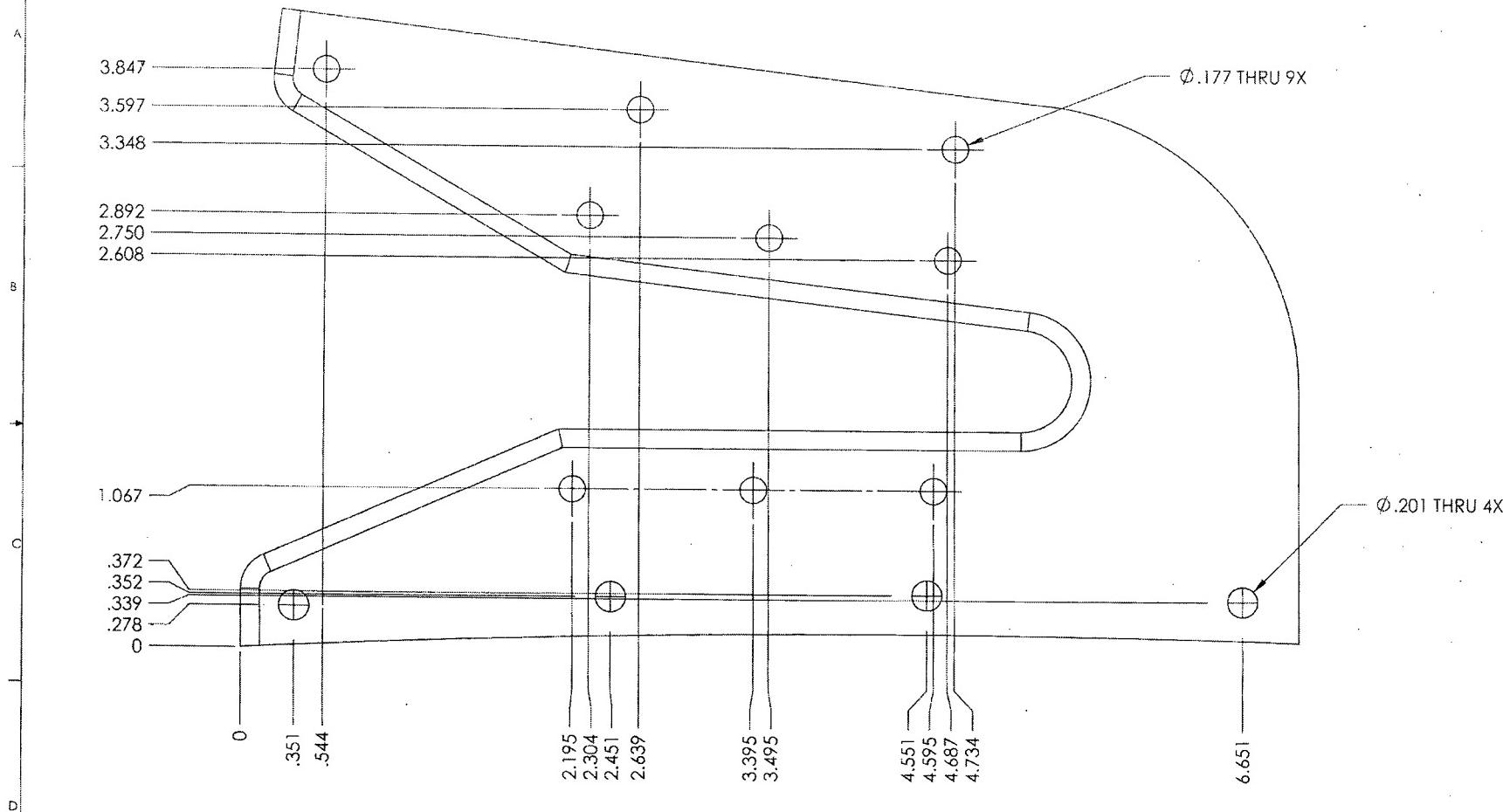


SECTION A-A 2 C8

ORIGINAL DATE 10/10/00	DRAWN BY J. SICKLER	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92054-3512 (760)724-5300
REVISION DATE N/A	REVISED BY N/A	CUTTER SUB ASSY
DRAWING APPROVAL DRAFTED 09/20/00	DESIGNED BY N/A	SCALE NONE
CONTRACT NO.	DATE ISSUED 07M26	PAGE NO. 646.9700
UNITS OF PRICE SPECIFIED INCHES AND FEET	2 PLACES DECIMALS 2 PLACES DECIMALS +000 ANGLES ± 0°	REV. N/C
		SHEET 3 OF 5

91791

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APICAL INDUSTRIES AND IS RESTRICTED FROM DISCLOSURE OR REPRODUCTION  
IN WHOLE OR IN PART, EXCEPT AS AUTHORIZED IN WRITING BY APICAL INDUSTRIES.



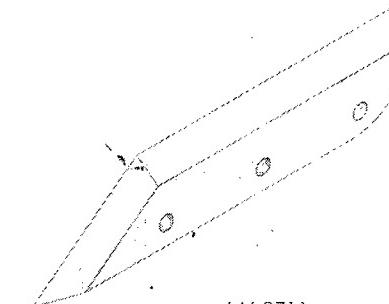
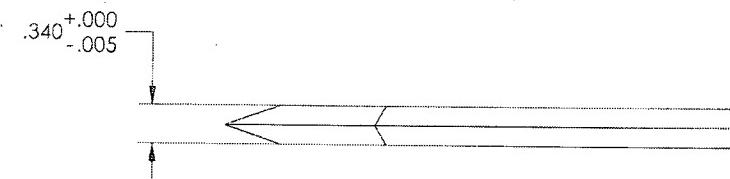
HOLE LOCATIONS +/- .002

ORIGINAL DATE 12/10/01	REVISION DATE 12/10/01	DRAWN BY P. RODRIGO	CHECKED F. BRAVO	APICAL INDUSTRIES 2605 TEMPLE HEIGHTS DR. OCEANSIDE, CA 92056-3512 (760)724-5300
<b>CUTTER SUB ASSY</b>				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: +.01 -.01 DRAWINGS APPROVED 12/10/01 CONTRACT #10				
SEE CAD CODE	WKG NO	B 07M26	646.9700	N/C

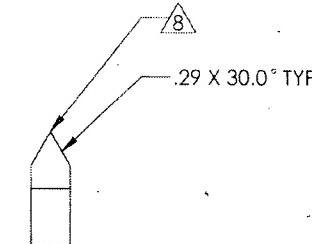
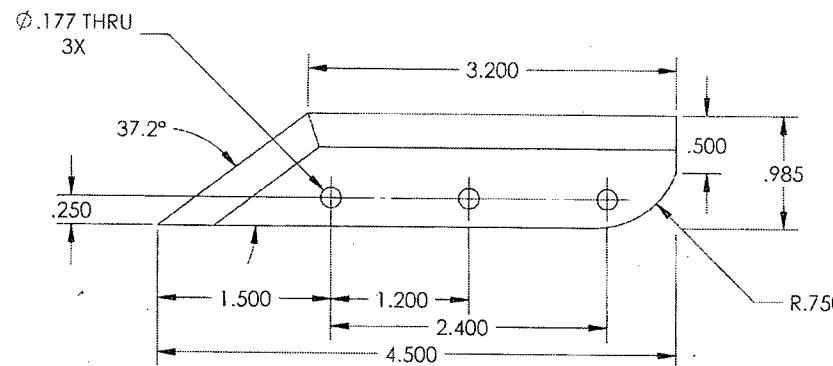
SCALE NONE SHEET 4 OF 5

91791

THIS DRAWING CONTROLS THE DRAWING & THE ASSEMBLY OF  
ALL ITEMS LISTED, EXCEPT AS NOTED OR WHOLE NUMBER.  
THE ASSEMBLY HIERARCHY OF SPECIAL ASSEMBLIES IS NOT CONTROLLED.



646.9711



ORIGINAL DATE	08/08/02	APICAL INDUSTRIES
DESIGNER	CHEN, C	2603 TEMPLE HEIGHTS DR.
REVIEWER	IPAVO	OCEANSIDE, CA. 92056-3512 (760)724-5300
SPONSOR APPROVAL		
PERF. TESTER		
COMPONENT NO.		
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES		CUTTER SUB ASSY
STRAIGHT DECKLASS 100		
STRAIGHT DECKLASS 100		
STRAIGHT DECKLASS 100		
SEE CASE CODE DIA 646.9700		
B 07MZ6	646.9700	N/C
SCALE 1:ONE		SHEET 5 OF 5

DART AEROSPACE LTD	Work Order:	91791
Description: Blade	Part Number:	646-9711
Inspection Dwg: 646-9711 Rev: NC		Page 1 of 1

# FIRST ARTICLE INSPECTION CHECKLIST

Measured by:	<i>FK</i>	Audited by:	<i>DAS 08</i>	Preliminary Approval:	
Date:	<i>12/12/28</i>	Date:	<i>9-89 12/12/30</i>		Date:

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

10.04.15



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO18762**

Purchase Order Date 1/09/13

PO Print Date 1/09/13

Page Number 2 of 2

Order From : VC-MET004

METCOR INC.  
560 BOUL. ARTHUR SAUVE  
SAINT-EUSTACHE, QC J7R 5A8  
CA

Contact Name	Buyer	Chantal Lavoie
Vendor Phone 450 473 1884	Requisition Nbr	
Vendor Fax 450 491 5498	Tax Resale Nbr	10127-2607
Vendor Account Nbr	Terms	Net 30
	Currency	CAD
	FOB	Destination-Collect

3	91791	646.9711 BLADES	1/23/13	24.00	\$2.1875	\$52.50
			Yes			

Special Inst: FINISH: HEAT TREAT TO 58-62 RC  
ROCKWELL HARDNESS

PART ARE MADE FROM AISI A2 TOOL  
STEEL

PLEASE NOTE: DETAIL C OC REQUIRED

PO Total: \$210.00

Change Nbr: 1

Change Date: 1/09/13

No substitution or deviation without  
consent.

Certificate of Conformity or Material  
Certification required  YES  NO

# METCOR INC.

560 BOUL. ARTHUR-SAUVÉ  
ST-EUSTACHE, QC J7R 5A8  
Tel: 450-473-1884 / Fax: 450-491-5498

## Reçu de livraison

Delivery Receipt

BON DE TRAVAIL	EXPÉDITEUR	BON D'EXPÉDITION
Order	Shipper ID	Shipper
182630	1	67976

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT /Customer 215

DART AEROSPACE  
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
Ph: 613-632-5200  
Fax: 613-632-1053

LIVRÉ À /Shipped To

DART AEROSPACE  
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
Ph: 613-632-5200  
Fax: 613-632-1053

COMMANDE DU CLIENT	BON DE LIVRAISON DU CLIENT	TYPE DE MATÉRIEL	DATE DE LA COMMANDE	TRANSPORTEUR
Customer PO	Customer Shipper No.	Material Type	Order Date	Carrier
PO18762		A2	2013/1/11	fedex

QUANTITÉ	No. PIÈCE / NOM DE LA PIÈCE	DESCRIPTION DE LA PIÈCE	POIDS
Quantity	Part No.	Part Name	Weight
96	646.3015 (32) BLADES REFERENCE 93344		31,
	(40) 646.9711 BLADES REFERENCE 90824		
	(24) 646.9711 BLADES REFERENCE 91791		

CONTENANT: 1 BOÎTE DE CARTON

TYPE DE CONTENEUR	# DE CONTENEURS	COMMENTAIRES CONTENEUR
Container Type	# Of Containers	Container Comments
BOITE DE CARTON	1	

### CERTIFICAT

EMPAQUETAGE	
Packing	

QUANTITÉ EXPÉDIÉE / Quantity Shipped :	96
POIDS EXPÉDIÉ / Weight Shipped :	31,00
QUANTITÉ RESTANTE / Quantity Remaining :	0
POIDS RESTANT / Weight Remaining :	0,00

### CERTIFICAT

QUANTITÉ EXPÉDIÉE /Quantity Shipped:	96
POIDS EXPÉDIÉ / Weight Shipped :	31,00

Signature:

Date:

EXPÉDIÉ LE / Shipped On : 2013/01/20



# Metcor Inc.

Bou. Arthur-Sauvé, St-Eustache (Québec) J7R 5A8  
450 473-1884  
Télécopieur/Fax administration 450 491-5498  
Télécopieur/Fax production 450 491-6454

Page 1 / 1

## Certificat de Conformité Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
182630	1

CLIENT / customer 215

DART AEROSPACE  
1270 ABERDEEN  
HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE  
1270 ABERDEEN  
HAWKESBURY

ON K6A 1K7

COMMANDE DU CLIENT customer no.	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat'l heat code	NUMÉRO DE LOT lot number
PO18762		A2		

### SPÉCIFICATIONS DU PROCÉDÉ processing specifications

VAC HARDEN

HARDEN AND TEMPER

EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	58 - 62 HRC	8	60.0 - 62.0 HRC

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
96	31	646.3015 (32) BLADES REFERENCE 93344  (40) 646.9711 BLADES REFERENCE 90824  (24) 646.9711 BLADES REFERENCE 91791  CONTENANT: 1 BOÎTE DE CARTON

28 Jan

### COMMENTAIRES / comments

CERTIFIÉ par / Certified by:



DATE: 2013-01-20

# METCOR INC.

560 BOUL. ARTHUR-SAUVÉ  
ST-EUSTACHE, QC, J7R 5A8  
Tel: 450-473-1884 / Fax: 450-491-5498

## Certificat de Conformité Détailé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
182630	1

CLIENT / customer 215

DART AEROSPACE  
1270 ABERDEEN  
HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE  
1270 ABERDEEN  
HAWKESBURY

1

ON K6A 1K7

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat'l heat code	NUMÉRO DE LOT lot number
PO18762		A2		

### SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

VAC HARDEN

HARDEN AND TEMPER

EXIGENCE / requirement	SPÉCIFICATIONS / specified TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	58 - 62 HRC	8 60.0 - 62.0 HRC

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
96	31	<p>646.3015 (32) BLADES REFERENCE 93344</p> <p>(40) 646.9711 BLADES REFERENCE 90824</p> <p>(24) 646.9711 BLADES REFERENCE 91791</p> <p>CONTENANT: 1 BOÎTE DE CARTON</p>

Operation	Temp. spécifiée Specified Temp	Temps de trempe Spécifié Specified Soak Temp	Atmosphere	Carbone Carbon Potential	Q-Media Q-Temp	Four # Furnace #	Date Départ Start Date	Heure d'entrée Time In	Heure de sortie Time Out	Date Complétée Date complete
1.00 CONT. INIT.	LAVAGE		si nécessaire							
2.00 PREPARING	COMPTAGE									
3.00 PREHEAT 1	1200	0:30	VAC			393				
4.00 PREHEAT 2	1500	0:30	VAC			393				
5.00 VAC HARDE	1800	1 hrs 30 minutes	VAC	AZOTE	393					

# METCOR INC.

560 BOUL. ARTHUR-SAUVÉ  
ST-EUSTACHE, QC, J7R 5A8

Tel: 450-473-1884 / Fax: 450-491-5498

## Certificat de Conformité Détailé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
182630	1

CLIENT / customer 215

DART AEROSPACE  
1270 ABERDEEN  
HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE  
1270 ABERDEEN  
HAWKESBURY

ON K6A 1K7

1

Operation	Temp. spécifiée Specified Temp	Temps de trempe Spécifié Specified Soak Temp.	Atmosphere	Carbone Carbon Potential	Q-Media Q-Temp	Four # Furnace #	Date Départ Start Date	Heure d'entrée Time In	Heure de sortie Time Out	Date Complétée Date complete
6.00 TEMPER	400°F	2 hrs	air			654				
7.00 TEMPER 2	400°F	2 hrs	air			654				
8.00 HARDN INS										
9.00 FINAL INSP							01-20-2013			01-20-2013

### COMMENTAIRES / comments

Le traitement thermique a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de traitement thermique ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandées ont été faites et documentés.

Aucun changement ou dérogation n'a été faite par rapport au traitement thermique demandé.

On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

All the heat treatment processing performed on this order was accomplished using heat treatment equipment compliant with the requested heat treatment specification.

All the heat treatment operations were accomplished in accordance with the requested/required heat treatment specification and all required verifications test have been performed and documented.

No unauthorized changes or deviations to required heat treatment specifications or procedures have been performed.

We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

APPROUVÉ par / Approved by:

*Isabel Oter*

DATE: 2013-01-22



/ Nous certifions que toute l'information comprise sur ce rapport est exacte et conforme aux requis du client./We certify that all the information on this report is exact and in accordance with the order requirements.